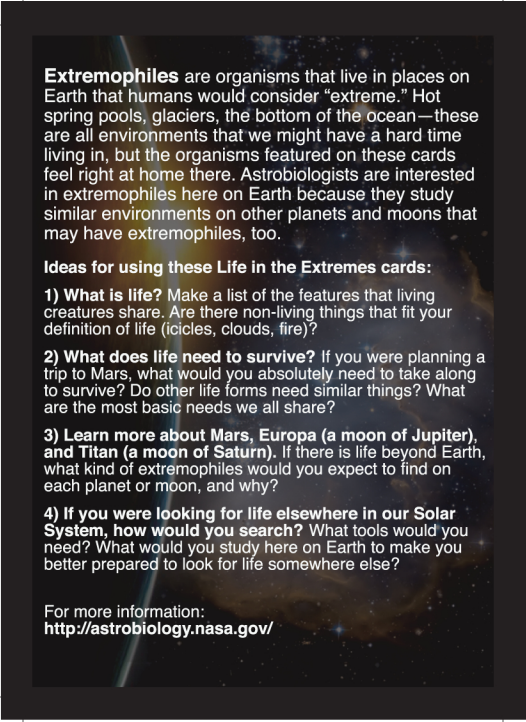


National Aeronautics and
Space Administration



life in the extremes

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Extremophiles are organisms that live in places on Earth that humans would consider “extreme.” Hot spring pools, glaciers, the bottom of the ocean—these are all environments that we might have a hard time living in, but the organisms featured on these cards feel right at home there. Astrobiologists are interested in extremophiles here on Earth because they study similar environments on other planets and moons that may have extremophiles, too.

Ideas for using these Life in the Extremes cards:

1) What is life? Make a list of the features that living creatures share. Are there non-living things that fit your definition of life (icicles, clouds, fire)?

2) What does life need to survive? If you were planning a trip to Mars, what would you absolutely need to take along to survive? Do other life forms need similar things? What are the most basic needs we all share?

3) Learn more about Mars, Europa (a moon of Jupiter), and Titan (a moon of Saturn). If there is life beyond Earth, what kind of extremophiles would you expect to find on each planet or moon, and why?

4) If you were looking for life elsewhere in our Solar System, how would you search? What tools would you need? What would you study here on Earth to make you better prepared to look for life somewhere else?

For more information:
<http://astrobiology.nasa.gov/>